

24.6520, 24.6600, 24.6500,  
16.8100, 16.8300, 24.6720

76968  
SOV/56-37-6-8/55

AUTHORS: Perelygin, V. P., Donets, E. D., and Flerov, G. N.

TITLE: Experiments in the Production of a New Fermium Isotope

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,  
Vol 37, Nr 6, pp 1558-1563 (USSR)

ABSTRACT: An investigation was made of the  $\alpha$ -active products interaction between accelerated oxygen  $O^{16}$  ions and uranium  $U^{238}$  nuclei. The energy of accelerated oxygen ions was 84 - 98 mev, and the beam was monochromatic. The  $U^{238}$  targets were prepared by sublimation under vacuum and by precipitation with tetraethyleneglycol on an Ni holder. Targets had a thickness from  $200 \mu g/cm^2$  to  $800 \mu g/cm^2$   $U^{238}$  atoms. The registration of  $\alpha$ -decay was carried out by means of a fast and highly sensitive method, which was originally developed by G. N. Flerov, S. M. Polikanov, A. S. Karamyan, A. S. Pasyuk, D. M. Parfanovich, N. I. Tarantin, V. A. Karanaukhov,

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Experiments in the Production of a New  
Fermium Isotope

76968  
SOV/56-37-6-8/55

V. A. Druin, V. V. Volkov, A. M. Semchinova, Yu. Ts. Oganessian, V. I. Khalizev, and G. I. Khlebnikov (cf. Doklady Akad. nauk SSSR, 120, 73, 1958). The measurements gave some proof of the existence of a new fermium isotope  $\text{Fm}^{249}$  which possesses a half-life of about 150 sec and an  $\alpha$ -particle energy of  $(7.9 \pm 0.3)$  mev. The procedure for the identification of transuranium isotopes was based on the registration in photographic emulsions of their successive  $\alpha$ -decays. V. V. Volkov, D. M. Parfanovich, S. M. Polikanov, A. M. Semchinova, and N. I. Tarantin participated in the discussion of the work. Three excitation curves are presented for reactions involving the emission of four and five neutrons. The paper contained 15 references, 4 Soviet, 1 Canadian, 1 U.K., 9 U.S. The 5 most recent U.S. references are: A. M. Friedman, J. E. Gindler, R. F. Barnes, R. Sjoblom, P. R. Fields. Phys. Rev., 102, 585, 1956; S. Amiel, A. Chetani-Strode, G. R. Choppin, A. Ghiorso, B. G. Harvey, L. M. Holm, S. G. Thompson. Phys. Rev., 106, 553, 1957; R. A. Glass, S. G. Thompson, .

Card 2/3

Experiments in the Production of a New  
Fermium Isotope

76968  
SOV/56-37-6-8/55

G. T. Seaborg. J. Inorg. Nucl. Chem., 1, 3, 1955;  
A. Ghlorso, Proc. Conf. on React. Betw. Complex Nucl,  
Gatlinburg, Tennessee, 1958; T. D. Jackson. Can. J.  
Phys. 34, 767, 1956.

SUBMITTED: July 4, 1959

Card 3/3

PERRYGIN, V.P.; TOLSTOV, K.D.

Cross section of the reaction  $\text{Li}^6 (n, \alpha) \text{H}^3$  for 2.15 Mev neutrons.  
Atom. energ. 9 no.6:488-489 D '60. (MIRA 13:12)  
(Lithium--Isotopes) (Tritium)

29512  
S/120/61/000/004/023/034  
E032/E514

24.6830

AUTHORS: Perelygin V. P., Myachkova S. A. and Tolstov K. D.  
TITLE: Introduction of beryllium grains into photographic emulsions  
PERIODICAL: Priroda i tekhnika eksperimenta, 1961, No. 4, pp. 145-147  
TEXT: Zh. S. Takibayev (Ref. 3: Zh. eksperim. i teor. fiz. 1953, 24, 229) is said to have been the first to introduce spherical metal grains into photographic emulsions. Quantitative experiments concerned with the determination of cross-sections using non-spherical beryllium grains were described by S. S. Vasil'yev, V. V. Komarov, A. M. Popova (Ref. 4: PTE, 1959 No. 1, 48). The dimensions of the grains depend on the minimum range of charged particles which can be recorded in an ordinary emulsion (3  $\mu$  approximately). However, the grains cannot be too small since otherwise there may be confusion as to whether the event takes place in the grain or the emulsion. The present authors have used the spark discharge method of evaporation of metals described by B. R. Lazarenko, N. I. Lazarenko (Ref. 5).  
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Introduction of beryllium grains

29612

S/120/61/000/004/023/034

E032/E514

Elektroiskrovaya obrabotka metallov (Electric Spark Treatment of Metals), 1950. Gosenergoizdat) In the case of a spark discharge between two electrodes located in a dielectric it is found that in most cases the metal grains produced during the process are spherical in form. It is stated that the "usual circuit" was employed with  $R = 115 \text{ Ohm}$ ,  $C = 2-8 \text{ } \mu\text{F}$ ,  $V = 110 \text{ V}$ . The average beryllium grain diameter was about  $1.5 \text{ } \mu$ . The volume of the dielectric was 50 to 100 cc and the evaporation process was continued for 60 to 90 min. At first the dielectric employed was absolute alcohol. However, the spark discharge in alcohol leads to the formation of  $\text{BeO}$  and  $\text{Be(OH)}_2$  and complex insoluble compounds. Tests were therefore made to determine whether the grains could be obtained with a spark discharge in liquefied argon. The evaporation was carried out in a dewar having a volume of about 200 cc. The argon was then driven off and the volume was filled with alcohol. In this way it was possible to obtain isolated beryllium grains and the suspension could be kept for long periods of time. In order to introduce the grains into the emulsion, the photographic plates were placed horizontally and the

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Introduction of beryllium grains ...

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S/120/61/000/004/023/034  
E032/E514

suspension was poured on to it. The particles then sedimented down onto the surface and the alcohol was evaporated. The photographic plate was then covered by a wet, unbacked emulsion and the composite emulsion was placed in a 5% solution of glycerine at 15°C for 45 min. The emulsion was then removed from the glass backing and dried with filter paper. The two-layer photo plates were then placed into a water bath at 45-48°C for 3 to 5 min. In this bath the upper layer fused into the lower one and the separation boundary could not be seen through a microscope. The procedure has been successfully used with Ilford E-1, C-2, HMFI Ya-2, T-1 and T-3 emulsions. Fig.2 shows the diameter (I) and mass (II) distributions. N in this figure is the number of grains, M is the weight of the grains in units of  $10^{-9}$  g/cm<sup>2</sup>, and d is the diameter in microns (horizontal axis). The method has been used in nuclear reaction studies with 14 MeV neutrons. Acknowledgments are expressed to G.Ye.Belovitskiy for advice. There are 2 figures and 5 references; all Soviet.

ASSOCIATION: Fizicheskiy institut AN SSSR (Physics Institute AS USSR)

Card 3/3

2h701  
S/050/61/040/005/001/010  
B102 B201

246600  
AUTHORS: Myachkova, S. A., Ferelygin, V. P.  
TITLE: Interaction of 14.1-Mev neutrons with Be<sup>9</sup>  
PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 40,  
no. 5, 1961, 1244 - 1249

TEXT: The interaction of neutrons with Be<sup>9</sup> has been repeatedly studied, with special stress on low-energy neutrons (e.g., G. J. Fisher, Phys. Rev. 108, 99, 1957); still, the reaction mechanism has not been fully clarified so far. The authors wanted in this connection to study the part played by the individual levels of the Be<sup>8</sup>-nucleus, excited in the Be<sup>9</sup>(n, 2n) reaction. To form an idea of the course of the (n, 2n) reaction, they examined the angular and energy distribution of alpha particles and neutrons appearing in this reaction. For a neutron source they used the T(d, n)Be<sup>4</sup> reaction (E<sub>n</sub> = 14.1 Mev, flux ~ 1.10<sup>9</sup> n/cm<sup>2</sup>). In the first experiment НИКФНТ-3 (НИКФИ T-3) photoplates treated with Be<sup>9</sup> powder (layer thickness 100μ;  
Card 1/4



24701

S/056/61/040/005/001/012  
B102, B201

Interaction of 14.1-Mev...

20 mg Be/cm<sup>3</sup>; Be grain size 2 - 3  $\mu$ ) were examined for neutron irradiation. All two-pronged alpha stars with vertices in the Be grains were selected for evaluation. Layers without Be were examined for background determination. About 250 events of (n, 2n) reactions on Be<sup>9</sup> were established, among which there were 20 Be<sup>9</sup>(n,  $\alpha$ )He<sup>6</sup> reactions (cross section:  $11 \pm 4$  mb). Two peaks were basically found in the spectrum of the excited states of the Be<sup>9</sup> nucleus: one corresponding to the 2.9-Mev level, and the second to the ~8-Mev level. A cross section of  $0.19 \pm 0.06$  b was calculated for the formation of the former, and  $0.14 \pm 0.04$  b for the latter. Also a peak corresponding to a ~5-Mev level ( $0.14 \pm 0.04$  b) was established, which, however, appeared more likely to be ascribable to a process, where there appeared no Be<sup>8</sup>. In a second experiment, the energy spectra of alpha particles formed in (n, 2n) reactions on Be<sup>9</sup> were examined. The target was metallic Be (~4  $\mu$ ) sputtered upon a tantalum backing. The plate types used for the first experiment served as alpha detectors. Irradiation took place in a vacuum chamber (0.1 mm Hg). Two sets of experiments were conducted, Card 2/2

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S/056/61/040/005/001/019  
B102/B201

Interaction of 14.1-Mev...

the first of which in a single-plate chamber for  $0^\circ$  and small angles (between alpha emission and neutron beam direction), and the second in a multiplate chamber (20, 45, 65, 90, 105, and  $120^\circ$ ). The total number of recorded alpha particles was about 2500. The total cross section of the (n, 2n) reaction on  $\text{Be}^9$  was found to be  $0.48 \pm 0.09$  b, while the cross section of the  $\text{Be}^9(\text{n}, \text{t})\text{Li}^7$  reaction was estimated as being about 20mb. In a third experiment, the energy and angular distributions of neutrons produced in the (n, 2n) reaction on  $\text{Be}^9$  were examined. Plates of the type НИКФИ-2 (NIKFI Ya-2) ( $200\mu$ ) served as neutron detectors. Irradiation took place in special boxes with controlled humidity. The plates were arranged under angles of 20, 40, 65, 90, and  $120^\circ$  to the incident neutron beam. About 5000 recoil proton tracks were recorded; the background was 40%. The neutron distribution measured for  $E_n > 4$  Mev was highly anisotropic. The total cross section of the (n, 2n) reaction on  $\text{Be}^9$  was found to be  $0.6 \pm 0.1$  b from the angular distribution of inelastically scattered neutrons. Taking all results into account and allowing for the necessary

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S/055/61/040/005/001/019

B102 B201

Interaction of 14.1-Mev...

corrections, this cross section is found to be  $0.54 \pm 0.07$  b. The excitation cross section for the  $\text{Be}^9$ -nucleus (2.43 Mev) and for the formation of the ground state of that nucleus is  $0.2 \pm 0.1$  b. In (n, 2n) reactions also the formation of excited levels 6.8, 7.9, and 9.1 Mev in  $\text{Be}^9$ , and 11.7 Mev in  $\text{Be}^8$  is possible. I. Ya. Barit and I. M. Frank are thanked for guidance and assistance. There are 4 figures and 13 references: 3 Soviet-bloc and 10 non-Soviet-bloc. The most important references to English-language publications read as follows: L. Steward, L. Rosen. Bull. Amer. Phys. Soc. 2, 33, 1957; M. Sachs. Phys. Rev. 103, 671, 1956; J. D. Anderson et al. Phys. Rev. 111, 572, 1958.

ASSOCIATION: Fizicheskii institut im. P. N. Lebedeva Akademii nauk SSSR  
(Institute of Physics imeni P. N. Lebedev, Academy of Sciences USSR)

SUBMITTED: August 23, 1960

Card 4/4

IRUIN, V.A.; PERELYGIN, V.P.; KHLEBNIKOV, G.I.

Spontaneous fission periods for  $\text{Np}^{237}$ ,  $\text{Pu}^{238}$ , and  $\text{Pu}^{242}$ .

Zhur. eksp. i teor. fiz. 40 no.5:1296-1298 My '61.

(MIRA 14:7)

1. Ob'yedinennyy institut yadernykh issledovaniy.

(Nuclear fission)

(Neptunium—Isotopes)

(Plutonium—Isotopes)

ALMAZOVA, S.P.; PERELYGIN, V.P.; SARANTSEVA, V.R., tekhn. red.

[Recording of nuclear fission in the case of a large background] Registratsiia deleniia iader v usloviakh bol'shogo fona. Dubna, Ob"edinennyi in-t iadernykh issl., 1962. 10 p.  
(MIRA 15:6)

(Nuclear fission)

PERELYGIN, V.P.; ALMAZOVA, S.P.; GVOZDEV, B.A.; CHUBURKOV, Yu.T.

[Spontaneous fission with an anomalously short period]  
Sponts.moe delenie s anomal'no korotkim periodom. Dubna,  
Ob"edinennyi in-t iadernykh issl. Vol.2. 1962. 7 p.  
(Nuclear fission) (MIRA 15:1)

38856

S/056/62/042/006/008/047  
B104/B102

24.6600

(2806)

AUTHORS: Perelygin, V. P., Almazova, S. P., Gvozdev, B. A.,  
Chuburkov, Yu. T.

TITLE: Spontaneous fission with anomalously short period. II.

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42,  
no. 6, 1962, 1472 - 1474

TEXT: Fission fragments of the spontaneous fission resulting from the interaction of 135 Mev  $\text{Ne}^{22}$  ions with  $\text{U}^{238}$  in an ionization chamber were studied using T-1 (T-1) and P-8 (P-8) photographic plates. The  $\text{U}^{238}$  target, 1 mg/cm<sup>2</sup> thick, was exposed for a few hours to an ion current of  $\sim 1 \mu\text{A}$  from the internal beam of the OIYaI cyclotron. A strong  $\gamma$  background as well as a background of  $\alpha$  particles were detected. 60 tracks of spontaneous fission fragments were found. The registration efficiency of the events was 50%. The half-life of the unknown isotope is  $17 \pm 7$  milli-sec; the production cross section on an interaction of 135 Mev  $\text{Ne}^{22}$  with

Card (1/2)

PERELYGIN, V.P.; TRET'YAKOVA, S.P.; SARANTSEVA, V.R., tekhn. red.

[Half-life of a spontaneously fissionable isomer] Period  
poluraspada spontanno deliashchegosia izomera. Dubna,  
Ob"edinennyi in-t iadernykh issledovani, 1963. 6 p.  
(MIRA 16:6)

(Isomers) (Nuclear fission)



KAFUSTSIK, A.; PERELYGIN, V.P.; TRET'YAKOVA, S.P.

[Efficiency of determining nuclear fission fragments  
with the aid of glass and mica] Effektivnost' regist-  
ratsii aktov deleniia iader s pomoshch'iu stekla i sliudy.  
Dubna, Ob"edinennyi institut iadernykh issledovani, 1963.  
8 p. (MIRA 17:1)

(Nuclear fission)

L 11379-63

EPF(n)-2/EWT(m)/BDS AFFTC/ASD/SSD Pu-4  
S/120/63/000/002/014/041

59  
58

AUTHOR: Almazova, S. P. and Perelvgin, V. P.

TITLE: Registration of nuclear fission under high-background conditions

PERIODICAL: Pribery i tekhnika eksperimenta, March-April 1963, v. 8, no. 2, 63-66

TEXT: The article discusses methods of eliminating backgroun due to light charged particles and  $\gamma$ -rays in photographic emulsions during registration of tracks of fission products during measurements of the periods of spontaneous  $\text{Np}^{237}$ ,  $\text{Pu}^{238}$ , and  $\text{Pu}^{242}$  fission and identification of spontaneous fission events with anomalously short periods. Oxidation of hidden images made it possible to eliminate  $\gamma$ -particle background of  $10^{11}$  particles/cm<sup>2</sup> and  $\gamma$ -ray background of  $10^5$  rn during registration of fission-product tracks. Underdevelopment

/Abstractor's note: abbreviation rn transliterated from Russian; probably "roentgen normal"/

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L 11379-63

S/120/63/000/002/014/041

Registration of nuclear fission...

made it possible to eliminate background of  $2 \cdot 10^{10}$   $\gamma$  - particles/cm<sup>2</sup> on P-8 photographic plates, to obtain clear pictures of fission-product tracks on P-8 photographic plates irradiated by  $10^{11}$  neutrons/cm<sup>2</sup> and  $\sim 3 \cdot 10^4$  rn of  $\gamma$  - rays, and to eliminate  $3 \cdot 10^8$   $\gamma$  - particles/cm<sup>2</sup> background on T-1 photographic plates. Physical enlargement of exposed grains on P-8 photographic plates was used to increase exposure efficiency. Further development of methods for registering fission-products under high-background conditions should use oxidation of hidden images, underdevelopment and physical enlargement, in this order. There are four figures.

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute for Nuclear Research)

SUBMITTED: May 10, 1962

Ja/llb  
Card 2/2

PERELYGIN, V.P.; TRET'YAKOVA, S.P.

Radiography of spontaneous nuclear fission. Prib. i tekhn. eksp.  
8 no.5:73-74 S-0 '63. (MIRA 16:12)

1. Ob'yedinennyy institut yadernykh issledovaniy.

FLEROV, G.N.; POLIKANOV, S.M.; GAVRILOV, K.A.; MIKHEYEV, V.L.; PERELYGIN, V.P.;  
PLEVE, A.A.

Formation of spontaneously fissioning isomers in reactions  
involving  $\alpha$ -particles and deuterons. Zhur. eksp. i teor. fiz.  
45 no.5:1396-1398 N '63. (MIRA 17:1)

1. Ob'yedinennyy institut yadernykh issledovaniy.

PERELYGIN, V.P.; TRAT'YAKOVA, S.P., ZVARA, I.

Recording nuclear fission with the aid of amorphous media  
containing  $\text{SiO}_2$ . Prib. i tekhn. eksp. 9 no.4:78-80 J1-Ag '64.  
(MIRA 17:12)

1. Ob'yedinennyy institut yadernykh issledovaniy.

KAPUSTSIK, A.; PERELYGIN, V.P.; TRET'YAKOVA, S.P.

Efficiency of recording nuclear fission events with the aid  
of glass and mica. Prib. i tekhn. eksp. 9 no.5:72-75 S-O '64.  
(MIRA 17:12)

1. Ob'yedinennyy institut yadernykh issledovaniy.

PERELYGIN, V. P.

4

L 17218-65 ENT(e)/EXP(t)/EXP(b) DIAMP/LJP(c)/AFAL JD/DX  
ACCESSION NR: AP4047420 S/0089/64/017/004/0310/0312 2

AUTHORS: Flerov, G. N.; Oganessian, Yu. Ts.; Lobanov, Yu. V.; Kuz-  
netsov, V. I.; Druin, V. A.; Perelygin, V. P.; Gavrilov, K. A.;  
Tret'yakova, S. P.; Piotko, V. M.

TITLE: Synthesis and physical identification of the isotope of the  
104th element with mass number 260

SOURCE: <sup>27</sup>Atomnaya energiya, v. 17, no. 4, 1964, 310-312

TOPIC TAGS: transuranium element, half life, spontaneous fission

ABSTRACT: In view of the fact that earlier estimates yielded a wide  
range of values for the half-life of the isotope  $104^{260}_{19}$ , whereas ex-  
periments have shown that the element  $102^{256}$  experiences spontaneous  
fission with a half-life of 1500 seconds, the authors developed a  
procedure for indicating the spontaneous fission, for use in searches

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L 13218-65

ACCESSION NR: AP4047420

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for the 104th elements. The experiments were made with the internal beam of a 300-cm heavy-ion cyclotron. The target was  $\text{Pu}^{242}$  and  $\text{Ne}^{22}$  ions were used for bombardment, so that the investigated reaction was  $\text{Pu}^{242}(\text{Ne}^{22}, 4n)104^{260}$ . The equipment consisted essentially of a variable-speed belt conveyor to transport the reaction products from the target to the detectors. The fragment detectors were silicate and phosphate glasses. The distribution of the tracks over the detectors yields information on the lifetime of the nuclei synthesized in the reactions. The results of the experiments yielded a half-life of  $0.3 \pm 0.1$  sec for the 104 element with mass number 260 under spontaneous fission. The correctness of the results was checked by examining the form of the excitation function, the cross sections at the maximum, and the lack of an effect in control experiments with other particles and other targets. "The authors thank A. F. Linev, A. N. Filipson, I. A. Shelayev, and the cyclotron crew for reliable operation of the cyclotron, S. M. Polikanov and Ye. D.

Cord 2/3

L 13218-65

ACCESSION NR: AP4047420

4

Donets for a discussion of the experimental results, and OyYal direc-  
tor Professor D. I. Blokhintsev and the State Committee on the Use  
of Atomic Energy in the USSR for support of the work." Orig. art.  
has: 3 figures.

ASSOCIATION: None

SUBMITTED: 29Aug64

ENCL: 00

SUB CODE: NP, *IC*

NR REF SOV: 008

OTHER: 005

Cord 3/3

L 41015-65 EWA(h)/EWT(m) Feb  
ACCESSION NR: AP007707

S/0367/65/001/001/0067/0071

AUTHOR: Lobanov, Yu. V.; Kuznetsov, V. I.; Pereygin, V. P.; Polikanov, S. M.;  
Oganesyan, Yu. Ts.; Flerov, G. N.

TITLE: A spontaneously fissionable isomer with a half-life of 0.0009 seconds

SOURCE: Yadernaya fizika, v. 1, no. 1, 1965, 67-71

TOPIC TAGS: spontaneous fission, isomer fission, short half-life isomer, radioactive decay, ion bombardment, plutonium target, uranium target

ABSTRACT: The authors have previously reported discoveries of short-lived, spontaneously decaying, nuclei with  $13.5 \cdot 10^{-3}$  sec. and  $\sim 3.5$  sec. half-lives (see, e.g., A. F. Linev, B. N. Markov, A. A. Pieve, S. M. Polikanov, Preprint OIYAI D-1693, 1964; V. P. Pereygin, S. P. Tret'yakova, ZhETF, 45, 863, 1963). In all probability, this considerable increase in spontaneous fission rates is due to the fact that fission proceeds from an excited rather than from a ground state. At the same time, several of the present authors predicted (V. A. Drulin, N. K. Skobelev, B. V. Pefilov, V. I. Kuznetsov, Yu. V. Lobanov, Yu. Ts. Oganesyan, Preprint OIYAI R-1651, 1964) that there should exist still another nuclear isomer

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L 41015-65

ACCESSION NR: AP5007707

with  $Z \leq 100$  which would have a spontaneous fission period of about 3.5 sec.; consequently, they continued their search for other possible short-lived isomers with lifetimes within the millisecond region. They developed a method for the registration of periods down to  $5 \cdot 10^{-4}$  sec. for fission fragments from spontaneous fission of nuclear heavy-ion reaction products and carried out experiments on the internal beam of the U-300 cyclotron of the OIYaI. The fission fragments were registered by means of glass detectors. After bombarding plutonium and uranium by neon and boron ions accelerated in the 310 cm machine, a spontaneously fissionable isomer was found with  $Z \leq 99$ ,  $A \leq 250$ , and a half-life equal to  $0.85 \pm 0.08$  milliseconds. The absence of a corresponding fissionable nucleus with  $T_{1/2} = 0.9$   $\mu$ sec. during the  $U + B^{11}$  reaction seems to indicate that the production cross section of the resulting isomer is two orders of magnitude smaller than the  $Pu + B^{11}$  production cross section. "The authors thank S. P. Tret'yakov and T. I. Rybakov for their help during the finishing and scanning of glass plates, and the personnel of the U-300 machine group for guaranteeing the continuity of the tests." Orig. art. has: 3 figures.

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute for Nuclear Studies)

SUBMITTED: 01 Sep 64

ENCL: 00

SUB CODE: NP

NO REF SOV: 008

OTHER: 000

Card 2/2

ACC NR: AP7008933

SOURCE CODE: UR/0367/66/004/003/0465/0467

AUTHOR: Kuznetsov, V. I.; Lobanov, Yu. V.; Pereygin, V. P.  
 ORG: Joint Institute for Nuclear Research (Ob'yedinennyy institut yadernykh issledovaniy)

TITLE: Half-life of isotope of element 102 with mass number 256

SOURCE: Yadernaya fizika, v. 4, no. 3, 1966, 465-467

TOPIC TAGS: ion acceleration, cyclotron, radioisotope, alpha decay

SUB CODE: 20,18

ABSTRACT: In 1963, an isotope of the 102nd element of mass number 256 (Donets, Ye. D., Shchegolev, V. A., Yermakov, V. A., Atomnaya Energiya (Atomic Energy), 16, 195, 1964) was synthesized in the reaction  $U^{238} + Ne^{22}$ . Its identification was made with the help of physical and chemical methods according to the characteristics of the daughter nucleus  $Fm^{252}$ . However, the measurement accuracy of the half-life of the  $102^{256}$  nucleus was no more than 40%.

Experiments were performed in 1963 for studying the spontaneous fission of the nuclei formed in the  $U^{238} + Ne^{22}$  reaction (Druin, V. A., Skobolev, N. K., Fefilov, B. V., Flerov, G. N., Preprint P-1580, OIYaI, 1964). The half-life  $T_{1/2} = 10 \pm$  seconds measured in this paper coincided, within the limits of error, with that obtained for isotope  $102^{256}$  in the paper of the first paragraph above. The yield of this spontaneously fissioning nucleus corresponded to the maximum cross section  $3 \cdot 10^{-34}$  cm<sup>2</sup>. From the character of the excitation function, it may be concluded that the reaction in this case is  $U^{238}(Ne^{22}, 4n)102^{256}$ . The

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ACC NR: AP7008933

absence of the effect in the controlled irradiation of the  $U^{238}$  target by  $He^{20}$  and  $O^{16}$  ions has permitted it to be finally established that the  $102^{256}$  nucleus undergoes its spontaneous fission in a 10-second period. From the relationship of the alpha decay and the spontaneous fission of this nucleus, the period of the spontaneous fission was found to be  $T_f \approx 1500$  sec.

The experiments described in the present paper were undertaken with a view to measuring more accurately the half-life of the isotope of the 102nd element with mass number 256. The experiments were conducted with the internal beam of a U-300 OIYaI cyclotron. A schematic diagram of the equipment was given in a previous paper (Lobanov, Yu. V., Kuznetsov, V. I., Polikanov, S. M., Oganesyan, Yu. Ts., Flerov, G. N.; Ya F. 1, 67, 1965). The beam of accelerated ions passed through an aluminum foil 6 microns thick, dividing the inner space of the equipment from the cyclotron vacuum chamber, and fell on the target turned by the active layer on the ion collector side. The nucleus formed as the result of the interaction between the accelerated ions and the target broke away from the target under the impact of the incident particle and fell on the collector, a continuous nickel strip 8 m long and 25 mm wide. In the experiments, the film moved at a velocity of 6-10 cm/sec. This provided optimum conditions for measuring a half-life on the order of 10 seconds. For cooling the target, the ion collector, and the nucleus collector the inner space of the equipment was filled with helium under a pressure of 40 mm of mercury.

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ACC NR: AF7008933

In our experiments, we used a  $U^{238}$  and  $Pu^{242}$  target about  $600 \mu\text{r}/\text{cm}^2$  on a thin aluminum substrate; the bombarding particles were accelerated  $Ne^{22}$  and  $O^{18}$  ions. The intensity of the ion beam was  $6-8 \mu\text{a}$ .

Special phosphorescent glasses and lavsan film, insensitive to small charged particles, were used as detectors of the fission fragments (Kaputsik, A., Porelygin, V. P., Tret'yakova, S. P., PTE, 5, 64, 1964; Floischgr, R. L., Price, P. B., Science, 140, 1221, 1963). The detectors were arranged along the film, practically continuously, their total length being 6 m.

In the irradiation of the  $U^{238}$  target by the accelerated  $Ne^{22}$  ions the recorded output of the spontaneously fissioned product with a half-life on the order of 10 seconds corresponded to a cross section on the order of  $(2-3) \cdot 10^{-34} \text{ cm}^2$ . An especially large output of this product was recorded when  $Pu^{242}$  was irradiated by accelerated  $O^{18}$  ions.

Card 3/5

ACC NR: AP7008933

Experiments with plutonium targets were made with the energy of the oxygen ions ranging from 89 to 104 Mev and a film velocity of 6.6 cm/sec.

A figure shows the yield of the fission products as a function of the energy and shows that the short-lived component has a curve which agrees nicely with the  $4n$  reaction curve. The maximum yield was recorded when the oxygen ion energy was 94 Mev, which corresponds to the partial cross section  $7 \cdot 10^{-34}$  cm<sup>2</sup>. For the reaction  $\text{Pu}^{242}(\text{O}^{18}, \text{p}^3\text{n})101^{256}$ , a somewhat larger cross section of  $9.0 \cdot 10^{-34}$  was obtained for an  $\text{O}^{18}$  ion energy of 104 Mev.

Thus, in the experiments involving the irradiation of plutonium targets with accelerated  $\text{O}^{18}$  ions two products of spontaneous fission with different half-lives were recorded. The short-lived component, whose excitation function corresponds to the  $4n$  reaction, was apparently caused by the spontaneous fission of the 102nd element of mass number 256.

Another figure shows the distribution of the recorded fragments of the short-lived component in equal time intervals for one series of experiments. The half-life of the 102nd element nucleus was, according to our measurements,  $T_{1/2} = 8.2 \pm 1.0$  seconds. This period was chiefly the result of the alpha decay of the  $102^{256}$  nucleus; it agrees well with previous results (see the first two papers cited above). The half-life period of  $\sim 3$  sec predicted in the paper (Viola, V. E., Seaborg, G. T., Nuclear Systematics for Heavy Elements, N. Y., 1965) agrees satisfactorily with our data.

Card 4/5



ACC NR: AP7008933

Further experimentation with this nucleus should give information on its alpha decay energy as well as a more accurate value for the period of spontaneous fission.

The authors are especially grateful to G. N. Flerov for the statement of the problem and his management of the work. They also thank V. A. Druin and Yu. Ts. Oganosyan for their assistance and their discussion of the results, and S. P. Tret'yakova and T. I. Rybakova for preparing the fission fragment detectors. Orig. art. has: 2 figures. [JPRS: 40,303]

Card 5/5

PERELYGINA, A. A.

PERELYGINA, A. A. -- "Experience in Improving the Service to Children in the Children's Homes of the City of Rostov na Donu and Rostov Oblast." Rostov na Donu, 1955. (Dissertation for the Degree of Candidate in Medical Sciences.)

So.: Knizhnaya Letopis', No. 8, 1956.

PERELYGIN, L. M. and SHIMAYUK, A. P.

"The Common Juniper. The Ecological and Forestry Characteristics and Physical and Mechanical Properties of the Wood." Dokl. Ak. Nauk SSSR, 67, 5, 1949.

Inst. of Forestry, Acad.Sci. USSR

PERELYGIN, L. M.

✓ 2926. Babitsky, V. A., Perelygin, L. M., and Semyonova, E. A.,  
Testing of wood for compression across the fibers (in Russian), *Trudi in-ta lesa Akad. Nauk SSR* 9, 315-331, 1953; *Ref. Zh.*  
*Mekh.* 1956, Rev. no. 3288.

A method and the results of compression tests across the fibers of the wood of pine, spruce, oak, ash, elm, birch, aspen, beech, and larch are described.

During the tests, specimens of three forms were used: cubes having an edge of 30 mm, prisms of 20 x 20 x 30 mm (the latter dimension across the fibers according to the direction of the action of the force). Two series of specimens from pine wood were investigated (from the peripheral and central portion of the trunk) with the object of explaining to what extent the radius of the yearly layers influences the value of the limit of plastic flow.

Specimens were investigated at three degrees of moisture: 165-250, 10, 16-21%. The tests are performed on IM-4P machines of TSNTHASB and GZIP.

The limit of plastic flow of the wood was determined with the aid of an autodiagram. In addition, the load corresponding to the limit of proportionality was found according to the compression diagram. Then, on the basis of these data, the values of the strength limit and the limit of proportionality were calculated.

**BAZHENOV, V.A., PEREL'YGIN, L.M., SEMENOVA, E.A.**

The results of the tests showed that in the case of wood the conventional strength limits with tangential and radial compression differ and are in specific relationships proper to the given type of wood. The character of the change in the limit of plastic flow testifies to its independence of the value of the radius of curvature of the yearly layers.

Authors suggest using a prism of  $70 \times 22 \times 30$  mm (the latter dimension across the fibers) as a standard specimen for testing wood for radial and tangential compression.

It should be noted that a reliable connection between the volumetric weight of the wood and the limit of plastic flow is lacking both with tangential and with radial compression. The limit of plastic flow cannot be identified with the conventional limit of accuracy and it is incorrect to identify it with the limit of proportionality, since in this case the physical essence of the phenomenon is lost: the development of deformation at a constant load. Resistance of the wood to compression across the fibers cannot be correctly characterized either by the volumetric weight of the wood or by its strength limit.

Courtesy Referativnyi Zhurnal

Translation, courtesy Ministry of Supply, England

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2/2 006

PERLYON

LEONT'YEV, Nikifor Leont'yevich; PERLYON, L.M., redaktor; SARMATSKAYA,  
G.I., redaktor izdatel'stva; BACHURINA, A.M., tekhnicheskii redaktor

[Long term stretch of wood] Dlitel'noe soprotivlenie drevesiny.  
Moskva, Goslesbunizdat, 1957. 130 p. (MLRA 10:10)  
(Wood)

PERELYGIN, V.M.

USSR/Chemical Technology - Chemical Products and Their Application. Water Treatment. Sewage Water, I-11

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62493

Author: Perelygin, V. M.

Institution: None

Title: On the Possibility of Processing Waste Water and Filter Press Cake of Sugar Refineries by the Agrobiological Method

Original

Periodical: Sov. zdravookhr. Kirgizii, 1955, No 5, 48-51

Abstract: Observations were carried out on the filtration fields of Belovodsk sugar refinery the waste water discharge onto which is about 30,000 to 40,000 cu m/hectare per season. No swamping occurred (soil, a low-carbonate sierozem). It was found that soil flooded with waste water becomes richer in humus, nitrogen, potassium and to a lesser extent in phosphorus. Experimental plantings of potatoes and maize were made. The crop yields on not irrigated control lot were: 100 centners potatoes and 21.9 centners of maize per hectare. On a lot

Card 1/2

PERELYGIN, V.M., kand.med.nauk

All-Union Conference on the hygienic problem of noise control. Sov.  
zdrav.Kir. no.2:61-64 Mr-Apr '58. (MIRA 12:12)  
(NOISE--CONGRESSES)



PERELYGIN, V. K.

Pereygin, V. K.

"Problems of the Sanitary Characteristics of Sugar Factories of Kirgizia."  
Kirgiz State Medical Inst. Frunze, 1955. (Dissertation for the Degree  
of Candidate in Medical Science)

So: Knizhnaya letopis', No. 27, 2 July 1955

PIRELYGIN, V.M.

Agrobiological method for cleaning sewage. Gig. 1 ser. 21 no.11:  
91-92 N '56.

(MLPA 10:2)

(SEWAGE--PURIFICATION)

PERELYGINA, V.N.

Gift received by V.I. Lenin from Donets Basin coal miners. Ugol'  
35 no. 4:56 Ap '60. (MIRA 14:4)

1. Partiyyny arkhiv Rostovskogo oblastnogo komiteta Kommunisti-  
cheskoy partii Sovetskogo Soyuza.  
(Donets Basin—Coal miners)

PERELYGIN, V. P.

PHASE I BOOK EXPLOITATION SOV/5335

Academiya nauk SSSR. Razvedyvatel'skiy vopros po provedeniyu  
Mezhdunarodnogo Geofizicheskogo Goda. V razdel programy RGG:  
Ionosfera.

Dreyfy i neodnorodnosti v ionosfere (Drifts and Inhomogeneities  
in the Ionosphere) Moscow, Izd-vo AN SSSR, 1959. 69 p. (Series:  
Sbornik statey, no. 1) 1,500 copies printed. Added t. p.:  
Drifts and irregularities in the ionosphere.

Resp. Ed.: S. P. Mirkotan; Ed.: A. D. Podolskiy; Tech. Ed.:  
V. V. Bruchgul.

PURPOSE: The publication is intended for geophysicists, meteorolo-  
gists, and communications specialists.

COVERAGE: This collection of 6 articles presents the results of  
investigations of drifts and inhomogeneities in the ionosphere,  
according to observations made at the Ashkhabad, Moscow, Tashkent,  
and Kharkov stations during the 1957-1958 period. The fact  
that these stations are geographically situated at different  
latitudinal and longitudinal coordinates is of importance for  
the comparison of observational results presented in individual  
articles. An English résumé accompanies each article. No per-  
sonalities are mentioned. References follow the articles.

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YEROFYEV, N.M.; DZHEMILEV, G.G.; PERELYGIN, V.P.; PETINOV, V.P.

First results of radiotechnical observations of the movement of irregularities (winds) in the ionosphere over Ashkhabad at the altitude of 200-300 kilometers. Dreify i neodn. v ionosf. no.1: 34-39 '59. (MIRA 13:1)

(Ionosphere)

PERELYGIN, V.P.

~~Physical nature of ultrarapid meteors.~~  
Physical nature of ultrarapid meteors. Izv. AN Turk. SSR no. 3:97 '56.  
(MLRA 9:12)

1. Institut fiziki i geofiziki Akademii nauk Turkmenskoy SSR.  
(Meteors)

IVANOV, K.V.; PERELYGIN, V.V.; MALIKHOV, V.P.; PAL'MOV, Ye.A. (Moskva)

Method for studying the role of physical effort in the irradiation  
of animals. Med. rad. 4 no.5:84-85 My '59. (MIRA 12:7)

(ROENTGEN RAYS, eff.

role of phys. effort in rats (Rus))

(EXERCISE, eff.

on response to x-irradiation in rats (Rus))

GETSELEV, Z.N., inzh.; KATKOV, G.K., inzh.; PERELYGIN, Yu.M., inzh.

Machinery for sorting and reloading lumber. Mekh. i avtom. proizv. 16 no.2:47-48 F '62. (MIRA 17:3)



PERELYGINA, A.A., aspirant (Moskva)

Use of sulfonamides in the clonical treatment of diabetes mellitus.  
Probl.endok. i gorm. 5 no.4:85-90 J1-Ag '59. (MIRA 13:2)

1. Iz klinicheskogo (zaveduyushchiy - prof. Ye.A. Vasyukova) i poli-  
klinicheskogo (zaveduyushchiy - prof. I.B. Khavin) otdelov Vsesoyuz-  
nogo instituta eksperimental'noy endokronologii (direktor - prof. Ye.  
A. Vasyukova).

(ANTIDIABETICS ther.)

23

C-9

Sizing paper with paraffin. A. I. Petrygina. *Danish. Prom. 26, No. 4, 16-19(1949).*—In view of the adverse effects of rosin on paper properties and because of the shortages of rosin, a process for sizing with paraffin was developed. A typical emulsion formula included 100 kg. paraffin, 20 kg. stearin emulsifier, 10 kg. gelatin stabilizer, and 8 kg.  $\text{Na}_2\text{B}_4\text{O}_7$  as a saponif. agent for the stearin. A final emulsion concn. of 25-30 g./l. was obtained along with a pH of 8.5-9.5. Stability of the emulsion increased at higher pH values and coagulation occurred at lower pH values. Care had to be taken during emulsification to have the solns. of borax and gelatin at the same temp. as the paraffin-stearin mixt. or coagulation would occur. Paraffin size can be used in conjunction with rosin size (0.5% paraffin based on bone-dry fiber wt.) and a 4-fold reduction in rosin size required (from 2.0 to 0.5%) can be achieved in this way.

Marshall Sittig

SHKARIN, Sergey Aleksandrovich, kand. tekhn. nauk; FERELYGINA,  
Anna Ivanovna, kand. tekhn. nauk; BRODOTSKIY, A.I., red.

[Manufacture of newsprint on high-speed machines] Proizvod-  
stvo gazetnoi bumagi na bystrokhodnykh mashinakh. Moskva,  
Lesnaya promyshlennost', 1964. 136 p. (MIRA 18:5)

PFRELYGINA, A.I.; SMIRNOV, S.M.

Ilmenite-magnetite ores in the Arsent'yevo deposit and mineral  
formation in them. Izv.vys.ucheb.zav.; geol.i razv 3 no.4:75-85  
Ap '60. (MIRA 13:7)

1. Moskovskiy geologiorazvedochnyy institut im. S.Ordzhonikidze.  
(Selenga Valley--Ilmenite)  
(Selenga Valley--Magnetite)

SMIRNOV, S.M.; PERELYGINA, A.I.

Principal characteristics of the structure and ore potential of massifs of basic and intermediate rocks in the Monastoy Range (Buryat A.S.S.R.). Izv. vyzn. ucheb. zav.: geol. i rass. 2 no.6: 3-12 Je '59 (MIRA 13:3)

1. Moskovskiy geologorazvedochnyy institut im. S. Ordzhonikidze. (Buryat-Mongolia--Rocks, Igneous)

AUTHORS: Kremnev, L.Ya.; Perelygina, A.I. 69-58-2 -8/21

TITLE: Gelated Emulsion 15. Limiting Concentration Emulsions of Paraffin in Water. The Structure of the Protective Layers (Zhelatinirovannyye emul'sii 15. Predel'nyye emul'sii parafina v vode. Stroyeniye zashchitnykh sloyev)

PERIODICAL: Kolloidnyy zhurnal, 1958, Vol XX, Nr 2, pp 174-178 (USSR)

ABSTRACT: The introduction into the paper mass of small quantities of hydrophobic materials, especially paraffin, increase the impermeability to water and also the quality of the paper. Paraffin emulsions for these purposes are prepared in the thermostat at a temperature of  $75^{\circ}\text{C} \pm 2$ . The limiting concentration emulsions are diluted with 5 % gelatine solution. As emulsion stabilizers, sodium stearate and gelatine are used or a mixture of both. The degree of dispersion of the limiting concentration paraffin emulsions is very high (figure 1a). The distribution curves show a maximum for all concentrations when the droplet size is 1 . The degree of dispersion is changed only slightly with an increase in the emulsification temperature from 60-90°C. The value of the surface limit of the protective layers increases with the concentration and is nearly constant at

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69-58-2 -8/23

Gelated Emulsions 15. Limiting Concentration Emulsions of Paraffin in Water. The Structure of the Protective Layers

high concentrations. The protective layers are polymolecular gelatinized films with structural and mechanical properties (viscosity and strength). The stabilizers studied have a strong structural viscosity and high thixotropic properties. The thickness of the protective layers in gelatine, with the low emulsifying power of 5 m<sup>2</sup>, is 0.2 , i.e. much larger. The addition of diluted emulsions of paraffin stabilized by gelatine to paper mass ensures good sizing of the paper. There is one set of graphs, 1 table and 9 references, 8 of which are Soviet and 1 English.

Card 2/3

69-58-2 -8/21

Gelated Emulsions 15. Limiting Concentration Emulsions of Paraffin in Water. The Structure of the Protective Layers

**ASSOCIATION:** Tsentral'nyy nauchno-issledovatel'skiy institut tsellyuloznoy i bumazhnoy promyshlennosti, Leningrad (Central Scientific Research Institute of the Cellulose and Paper Industry, Leningrad)

**SUBMITTED:** February 28, 1957

1. Paraffin--Emulsions--Concentrates--Control 2. Water--Applications  
3. Gelatin--Applications

Card 3/3



PERELYGINA, A. I.: Master Tech Sci (diss) -- "Production and investigation of emulsions of paraffin for sizing paper". Leningrad, 1958. 16 pp (Min Higher Educ USSR, Leningrad Order of Lenin Forestry Engineering Acad im S. M. Kirov), 150 copies (KL, No 6, 1959, 175)

PEREL'YGINA, A.I.

KREMNEV, L.Ya.; PEREL'YGINA, A.I.

Gelated emulsions. Part 15: Limit concentration emulsions of paraffin in water. Structure of protective layer [with summary in English]. Koll. zhur. 20 no.2:174-178 Mr-Apr '58. (MIRA 11:5)

1. Tsentral'nyy nauchno-issledovatel'skiy institut tsellyuloznoy i bumazhnoy promyshlennosti, Leningrad.  
(Emulsions) (Paper)

PERELYGINA, L.F.

Technological training of students in sugar factories.  
Sakh.prom.35: no.3:7 Mr '61.

(MIRA 14:3)

1. Smelyanskiy tekhnikum.  
(Sugar manufacture—Study and teaching)

IVANOVA, N.M.; KOZHINA, A.D.; PERELYGINA, L.I.; TARASOVA, V.A.;  
PURSOVA, Ye.I.; CHEREZOVA, R.S.; SHKOL'NIK, Ye.I.; SHLEYFMAN,  
Kh.I.

[Economy of Voronezh Province in 1960; collection of statistics]  
Narodnoe khoziaistvo Voronezhskoi oblasti v 1960 godu; statisti-  
cheskii sbornik. Voronezh, Voronezhskoe otd-nie Gosstatizdata,  
1961. 139 p. (MIRA 15:6)

1. Voronezh. Oblastnoye statisticheskoye upravleniye.  
(Voronezh Province--Economic conditions)

121  
DANILOVA, M.K.; IVANOVA, N.M.; KALININ, T.V.; PERELYGINA, L.I.; SALMANOVA,  
Ye.S.; SHKOL'NIK, Ye.I.; SHLEYFMAN, Kh.I.; STOLYAROVA, A.I., red.;  
SERADZSKAYA, P.G., tekhn.red.

[Economy of Voronezh Province; a statistical manual] Narodnoe  
khoziaistvo Voronezhskoi oblasti; statisticheskii sbornik. [Voronezh]  
Voronezhskoe knizhnoe izd-vo, 1957. 139 p. (MIRA 11:3)

1. Voronezh (Province). Statisticheskoye upravleniye. 2. Statisti-  
cheskoye upravleniye Voronezhskoy oblasti (for all, except Stolyarova,  
Seradskaya). 3. Nachal'nik Statisticheskogo upravleniya (for  
Stolyarova)

(Voronezh Province--Statistics)

ODYNETS, R.N.; ILIREZOVA, Ye.P.; PERELYGINA, V.S.

Nitrogen and carbon metabolism in sheep in case of a high strontium level in the food ration. Izv. AN Kir. SSR Ser. biol. nauk 2 no.5: 41-45 '60. (MIRA 14:6)

(SHEEP—PHYSIOLOGY) (STRONTIUM—PHYSIOLOGICAL EFFECT)  
(THYROID GLAND)

RENNIYON, V. B.

Dissertation: "Metabolism of Nitrogen, Calcium, and Phosphorus in Rams, 1954, and  
Lambs of the 'Prekos' Type." Gen. Biol. Sci., Kirov Agricultural Institute,  
Referativnyi Zhurnal--Zhimiya, Moscow, No. 5, Apr 54.

SO: JUN 284, 26 Nov 1954

FEREL'ZON, R.A.

VIKSLER, A.A.; GRIGOR'YEVA, A.M.; KUL'CHITSKAYA, V.S.; LUTSENKO, A.I.;  
FEREL'ZON, R.A.; TRYASUNOVA, M.V.; SLEMZIN, A.A., redaktor;  
POMICHEV, P.M., tekhnicheskii redaktor

[Soviet live stock in numbers; a statistical manual] Chislennost'  
skota v SSSR; statisticheskii sbornik. Moskva, Gos.stat.izd-vo,  
1957. 618 p. (MLRA 10:8)

1. Russia (1923- U.S.S.R.) TSentral'noye statisticheskoye  
upravleniye.  
(Stock and stockbreeding--Statistics)



AFENDULOV, K.F., kand. sel'skokhoz. nauk; BOYKO, Ye.I., kand. sel'skokhoz. nauk; PEREMERAY, Ye.A., kand. sel'skokhoz. nauk; PODURAZHNYI, P.Y. kand. sel'skokhoz. nauk; PONOMARENKO, F.K.

Practices in the intensive use of land. Zemledelie 27 no.6:15-20 Je '65. (MIRA 18:9)


1. Chernigovskaya oblastnaya sel'skokhozyaystvennaya opytnaya stantsiya. 2. Glavnyy agronom opytnogo khozyaystva Chernigovskoy oblastnoy sel'skokhozyaystvennoy stantsii (for Ponomarenko).

PEREMETEVA, T.V.

1. LYUBOMILOV, V.I. TURCHINSKIY, P. N.,  
PEREMETEVA, T. V.

2. USSR (600)

"A study of Boron Chloride and its Isomers. I", Zhur. Obshch.Khim. 9, No. 22, 1939.  
Kuskovskiy Chem.Plant. Received 9, June 1939.

9. .Report U-1626, 11 Jan 1952.

PEREMETOV, B.V.; ZEN'KOVICH, A.M.

Installation of aluminum exhaust pipes. Prom.stroi. 41 no.9:11-13  
S '63. (MIRA 16:11)

SHEGAL, A.V., inzh.; PEREMETOV, B.V.

Construction of an open-hearth plant with large-capacity furnaces.  
Prom.stroi. 40 no.6:5-8 '62. (MIRA 15:6)  
(Magnitogorsk—Open-hearth furnaces)

PEREMETOV, I., inzh.; BOYKO, I., inzh.; GRIGOR'YEV, N., inzh.

Odessa harbor elevator. Muk.-elev. prom. 28 no.11:10-11 N '62.  
(MIRA 16:2)

1. Odesskoye upravleniye khleboproduktov.  
(Odessa—Grain elevators)

PEREMEYES, Kh. [Peremees, H.]; ANSO, Ya. [Ansoo, J.]

At the Central Laboratory of the Maardu Chemical Combine,  
Zav.lab. 27 no.9:1170-1171 '61. (MIRA 14:9)

1. Glavnyy inzhener TSentral'noy laboratorii Maarduskogo  
khimicheskogo kombinata (for Peremeyes). 2. Nachal'nik  
TSentral'noy zavodskoy nauchno-issledovatel'skoy laboratorii  
Maarduskogo khimicheskogo kombinata (for Anso).  
(Maardu—Chemical laboratories)

VARENYI, Janos; SCHMELCZ, Mihalyne; PEREMI, Erno

Analysis of changes in work requirement and examination of the development of productivity at textile finishing plants. Munka szemle 5 no.9: 4-7 S '61.

PEREMILOVSKIY, I.A., inzh.; KABLUKOVA, R.A., inzh.

Electrodes for built-up welding of dies for drop  
forging. Svar.proizv. no.7:27-28 J1 '60.  
(MIRA 13:7)  
(Dies (Metalworking)--Maintenance and repair)  
(Electrodes)



S/135/60/000/007/009/014  
A006/A002

AUTHORS: Peremilovskiy, I.A., Engineer, Kablukova, R.A., Engineer

TITLE: Electrodes for Hardfacing Drop Forging Dies<sup>14</sup>

PERIODICAL: Svarochnoye proizvodstvo, 1960, No. 7, pp. 27-28

TEXT: Instead of manufacturing drop forging dies entirely of the expensive "3X2B8" (3Kh2V8) steel, it is economically more advantageous to use this steel for hard facing dies made of "5XHC" (5KhNS) steel. Manual arc welding must be used for this purpose owing to the complicated configuration of dies and relatively short welds. For this reason the development of suitable welding electrodes was required, which would produce a metal surface with a composition corresponding to that of 3Kh2V8 steel. The "KC-3X2B8" (KS-3Kh2V8) ceramic flux, developed by the Kiyevskiy politekhnicheskii institut (Kiyev Polytechnic Institute) can be used only in automatic welding with constant arc current and voltage. The problem was solved by using "CB-08A" (Sv-08A) low-carbon steel rods of 4 mm diameter and a coating which ensured the proper alloying of the weld. The composition of the coating was calculated and corrected according to experimental results, thus the final composition was (in %): 24 "B-2" (V-2) ferrotungsten, 6.6 "Xp-6" (KhR-6) ✓

Card 1/2

S/169/63/000/002/029/127  
D263/D307

**AUTHORS:** Lapshin, V. I., Peremitin, B. V. and Smirnov, A. S.

**TITLE:** Study of the possibility of rapid measurement of plutonium concentration in air with the aid of inertial precipitator (impactor)

**PERIODICAL:** Referativnyy zhurnal, Geofizika, no. 2, 1963, 19-20, abstract 2B138 (Sb. rabot po nekotorym vopr. dozimetrii i radiometrii ionizir. izlucheniya. Vyp. 2, M., Gosatomizdat, 1961, 177-186)

**TEXT:** It is suggested that a ring inertial precipitator (impactor) should be used to collect the plutonium aerosol, together with a scintillation  $\gamma$  counter. The ring gap is 1.7 mm, and the volume flow rate of air is 550 - 700 l/min. Operation of the impactor is based on the fact that sizes of the natural  $\alpha$ -active aerosols are considerably below those of the industrial plutonium aerosol. Special parallel experiments with the impactor and filtration through  $\phi$ PP (PPP) fabric showed that an average of 1%, and not more than

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D263/D307

Study of the possibility  
**APPROVED FOR RELEASE: 06/15/2000** CIA-RDP86-00513R001240010018-4"

3%, of natural radioactive aerosols (decay products of Rn and Tn) is deposited on the backing of the impactor. Deposition efficiency of the plutonium aerosol is 70%. To ensure rapid measurement (30 - 45 min) of low Pu concentrations in the air, with these characteristics of the impactor, the authors suggest the use of a combination of the impactor with the  $\alpha$ -radiation energy discrimination method, or with a simple single-channel  $\alpha$ -spectrometer. The basic diagram of such combined instrument is given. [Abstracter's note: Complete translation.]

Card 2/2

AUTHOR: Peremitina, K.S. and Frishberg, V.D. (VUKhIN) 519  
TITLE: Coals of the Kol'chuginsk strata of the Kuznetsk Basin  
as a raw coking material. (Ugli Kol'chuginskoy svity  
Kuznetskogo Basseyina kak syr'e dlya koksovaniya.)  
PERIODICAL: "Koks i Khimiya" (Coke and Chemistry),  
1957, No. 4, pp. 3 - 8, (U.S.S.R.)

ABSTRACT: A short characteristic of coals from main deposits of the Kolchuginsk strata is given. In order to evaluate their coking properties, a systematic investigation on laboratory, pilot plant and in some cases on a full industrial scale was carried out. In Table 1 quality characteristics (technological group, vitrinite content, plastometric indices, ash and volatile contents) of typical coals from the Kolchuginsk strata (mainly gas and fat coals) and the physical properties of coke produced on a pilot plant scale are given. Results of pilot plant coking of binary mixtures with a diluting coal of the TS sh.9-15 group from the Anzhersk deposit are given in Table 2. The results of the pilot plant coking experiments were, to a considerable extent, confirmed on industrial ovens (Table 3). On the basis of the results obtained the following is recommended: 1) increase in the volume of prospecting and industrial mining in some sector of the above deposits; 2) improvement in beneficiation methods; 3) utilisation of gas coals in blends of Eastern coking plants; 4) in order to utilise gas coals of a low coking

PEREMITINA, L. D., Cand Med Sci -- (diss) "Analysis of a method of titrating dysenteric bacteriophage in liquid medium." Moscow, 1960. 15 pp; (Ministry of Public Health USSR, Central Inst for Advanced Training of Physicians); 200 copies; price not given; (KL, 17-60, 172)

PERMITINA, L.D.

Significance of the complete antigen content of dysentery cultures  
in the lytic activity of bacteriophage. Zhur.mikrobiol.oid. i  
immun. 28 no.7:56-61 J1 '57. (MIRA 10:10)

1. Iz Gosudarstvennogo kontrol'nogo instituta imeni Tarasevicha.  
(SHIGELLA DYSENTERIAE,  
complete antigen content in culture, role in lytic  
activity of bacteriophage (Rus))  
(BACTERIOPHAGE,  
of Shigella dysenteriae, role of antigen content in  
culture in lytic activity (Rus))

Country : USSR  
 Category : Microbiology-Microbes Pathogenic for Man and Animals  
 Abs. Jour : Ref Zhur - Biol., No.19, 1958, 5126  
 Author : Perezhina, L.B.  
 Institut. :  
 Title : The Significance of the Quantitative Content of Complete Antigen in Strains of Bacteriophage for the Lytic Activity of Bacteriophage  
 Orig. Pub. : Zh. Mikrobiol., Epidemiol., i Immunobiol., 1957, No.7, 55-61  
 Abstract : The content of complete antigen in cultures was determined according to the amount of specific polysaccharide contained in them. Cultures were made of 52 strains of Brickerlyev-Shiga, Flexner, and Colne bacilli. The quantity of complete antigen in the cultures was closely connected with the shape of the colonies (there was more in the S-type colony). The more virulent cultures most frequently contained a greater quantity of antigen than the avirulent colonies. Phages prepared in strains rich in complete antigen possessed lysing activity and stability during continued maintenance. - B.A.  
 Card: 1/1 Gruzman

PRISHKOV, M.M.,; PIREMITINA, L.D.,; SAMSONOVA, M.E.

Effect of cobalt on phagolysis of Shigella dysenteriae. Zhur.  
mikrobiol., epid. i immun. 27 no.1:108-109 Ja '56 (MIRA 9:5)

1. Iz Gosudarstvennogo kontrol'nogo instituta syvorotok i vaktsin  
imeni L.A. Tarasevicha (dir. S.I. Didenko)

(SHIGELLA,

dysenteriae, phagolysis, eff. of cobalt (Rus))

(BACTERIOPHAGE,

phagolysis of Shigella dysenteriae (Rus))

(COBALT, effects,

on Shigella dysenteriae phagolysis (Rus))

PEREMSKY, R.

Chemists in the rubber industry and the revision of efficiency standards. p. 202  
Better care for the pioneers of socialist competition.  
(CHEMIE, Vol. 7, no. 11, Nov. 1951, Czechoslovakia)

SO: Monthly List of East European Accessions, Vol 2 # 8, Library of Congress,  
August 1953, Uncl.



PEREISKY, R.

Sulfenamides, an important group of accelerators. p. 110

CHEMICKÉ PRŮMYSLI. (Ministerstvo chemického průmyslu) Praha, Czechoslovakia  
Vol. 9, No. 2, Feb. 1959

Monthly List of East European Accessions (EFAI), LC, Vol. 8, No. 7, July 1959  
Uncl.

L 12313-63

EMF(j)/EXT(m)/BDS ASD/AFFTC Pc-4 RM/JXT(DR)

S/081/63/000/005/070/075

58

AUTHOR: Peremsky, R.

TITLE: Vulcanization of tires at elevated temperatures (a study of the influence of various materials)

PERIODICAL: Referativnyy zhurnal, Khimiya, no. 5, 1963, 620, abstract 5T310  
(Kaucuk a plast. hmoty, 1961, no. 9, 281 - 288)

TEXT: The influence of elastomers and vulcanizing systems on changes in the physical and mechanical properties of vulcanized rubber obtained at higher temperatures (145-170°C) was investigated. The nature of changes in properties of typical protective and breaker mixtures from natural rubber (NK) and synthetic rubber (SK), the influence of the content of NK, S, vulcanization retarders and rosin, and of a type of accelerants was studied. Vulcanization at high temperatures lowers almost all of the physical and mechanical properties of vulcanized rubber, especially when the mixture contains NK. The expansion and resistance to growth of the cut is somewhat increased. A less pronounced lowering of physical and mechanical properties is attained when the S constant is decreased and when a mixture of Altax and thiurea ammonium sulfide is used as an accelerator. Accelerators have practically no effect on the stability and modulus of mixtures made from 100% SK, but

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Vulcanization of tires .....

increase the elasticity and lower the expansion and hardness. A higher content of S in mixtures from 100% SK lowers the strength and expansion, but increases hardness and module. Sulfur content does not affect elasticity. Addition of a vulcanization retarder has practically no effect on changes in properties. Addition of 2% rosin during vulcanization at 145° C results in lowering of stability and increase in expansion, during vulcanizing at 170°C it does not influence the changes in these properties, but lowers the elasticity. Experimental studies on tires of size 5.60 - 15, vulcanized at 145 and 155°C showed an increase in the period of service as compared with tires made by the usual method. N. Kim.

[Abstractor's note: Complete translation]

Card 2/2

PEREMSKY, R.

The aging of rubber in the light of new Soviet research results. R. PEREMSKY. *Chem. Prilozh.* 3, 383-7(1953).— The work of ~~PEREMSKY~~ and Lyubchanska (*C.A.* 46, 4835g) is discussed. The results were obtained with Na-butadiene rubber, where, due to 80% double bonds in the side chains, thermal structural transformation prevails. This may be different with vulcanizates from natural rubber. L. A. H.

PERENSKY, R.

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2 may

4450. Influence of inorganic activators upon the degree of vulcanization of rubber mixtures. R. PERENSKY. *Chem. Abstr.* 1956: 5, 110-4. ~~1956: 5, 110-4~~  
 4451. Concerning the influence of inorganic activators on degree of vulcanization have been carried out with mixtures containing Captax and Donax accelerators and combinations of both. The vulcanization coefficient is studied as well as some physical properties. It is found that in steam vulcanization, magnesium oxide has some advantages compared with the commonly used zinc oxide. In combining Captax and Donax accelerators a combination of the two activators is advantageous too. Zinc oxide cannot be recommended generally as an activator for all kinds of accelerators and all vulcanization methods.

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MA JEN

PEREMSKY, Rudolf, inz.

New product of the Kaucuk National Enterprise, Klarupy. Siln  
doprava 12 no.2:12-13 F\*64

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A-4

DETERMINATION OF URINE-NITROGEN IN ENDOCRINE  
AND JOINT DISEASE. G. FANTASY and K. FRANKY  
(Magyar Orvosi Arch., 1933, 33, 294-303; (Chem.  
Zentr., 1933, H. 2907).—Blood- and urinary NH<sub>4</sub>-N  
were determined fasting and after a meat meal.  
A. A. E.

ASS. S.E.A. METEOROLOGICAL LITERATURE CLASSIFICATION

12

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Amino nitrogen in diseases of the endocrine and the joints. GILSON PANDAY AND B. ALMAN FRIEDLY. *Magyar Orvosi Arch.* 33, 201 (1932).—Before breakfast the blood amino nitrogen is uniform in such diseases as hyperthyroidism, disease of the pituitary gland, diabetes, gout, chronic disease of the joints and in alkaptonuria. The digestion of meat causes an increase of about 6%. The urine amino nitrogen increased in some cases of hyperthyroidism and myxedema, in all cases of pituitary troubles, in serious cases of diabetes, and in most cases of chronic polyarthritis. A relationship between the increase of the amino nitrogen excreted and the pathogenesis of articular disease associated with alkaptonuria and with chronic polyarthritis is suggested.

H. TAUBER



PEREMY, G.; JENDRASSIK, B.

Psychosomatic functional disorders. Ideg. szemle 11 no.3:60-64 June 58.

1. A Fovarosai Bajcsy-Zsillinszky Korhaz (Igazgato foorvos: Mester Endre dr.) I. Belosztalyanak (Foovos: Peremy Gabor dr.) kozlemenye.

(PSYCHOSOMATIC DISEASES

analysis of concept of psychosomatic funct. disord. (Hun))

PEREMYKIN, V.

Agriculture

Proposed organizational and economic plan of the "Nakotne" collective farm. Riga, AN  
Latviskoi SSSR. Latvianizdat, 1950.

9. Monthly List of Russian Accessions, Library of Congress, October 1952<sup>2</sup> Unclassified.

1. PEREMYKIN, V.
2. USSR (600)
4. Collective Farms
7. Employment of labor in collective farm field brigades, Sots.sel'khoz. 24 no. 4, 1953.
9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

PERMYKIN, V.I.; POLEZHAYEV, V.A.

Split harvesting of oil flax is an important means of increasing  
the production of vegetable oil. Masl.-shir. prom. 24 no. 8:4-6 '58.  
(MIRA 11:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut maslichnykh i  
efiromaslichnykh kul'tur.  
(Flax--Harvesting)

PEREMYKIN, Vasil'iy Il'ich, kand. sel'khoz. nauk; DVORYADKIN,  
Nikolay Ivanovich, kand. ekor. nauk; FREYDMAN, S.M., red.;  
DOZLOVSKAYA, M.D., tekhn. red.; OKOLELOVA, Z.P., tekhn.red.

[Economics of oilseed plant production] Ekonomika proiz-  
vodstva maslichnykh kul'tur. Moskva, Sel'khozizdat, 1963.  
346 p. (MIRA 16:12)

(Oilseed plants--Economic aspects)

PERENYKIN, V.I.; POLEZHAYEV, V.A.

Split harvesting of oil flax is an important means of increasing  
the production of vegetable oil. Masl.-zhir. prom. 24 no. 8:4-6 '58.  
(MIRA 11:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut maslichnykh i  
efiromaslichnykh kul'tur.  
(Flax--Harvesting)

BADAR'YAN, G.G.; TYUTIN, V.A.; CHEREMUSHKIN, S.D.; ZUZIK, D.T.;  
 KHODASEVICH, B.G.; FRAYER, S.V.; GUSANOV, Ye.I.; KAZANSKIY,  
 A.M.; KASSIROV, L.N.; KARAYEV, S.A.; AMRAKOV, V.A.;  
 VASIL'YEV, N.V.; BUGAYEV, N.F.; SAPIL'NIKOV, N.G.; KASTORIN,  
 A.A.; RUDNIKOV, V.N.; YAKOVLEV, V.A.; PEREKYKIN, V.I.;  
 ISAYEV, A.P.; KUZ'NICHEN, N.N.; IL'DI, S.A.; PROMIN, V.A.;  
 LUK'YANOV, A.D.; SHAKHOV, Ya.K.; IL'ICHEV, A.K., kand. sel'-  
 khoz. nauk; KOGAN, A.Ya.; TSYNKOV, M.Yu.; BABIY, L.T.;  
 GORBUNOV, I.I.; KOVALEV, A.M.; ROMANCHENKO, G.R.; BRODSKAYA,  
 M.L., red.; IVANOVA, A.N., red.; GUREVICH, M.M., tekhn. red.;  
 TRUKHINA, O.N., tekhn. red.

[Economics of agriculture] Ekonomika sotsialisticheskogo sel'-  
 skogo khoziaistva; kurs lektsii. Moskva, Sel'khozizdat, 1962.  
 710 p. (MIRA 15:10)

(Agriculture—Economic aspects)

SUSLOV, V.M., kand.ekonom.nauk; PEREMYKIN, V.I., kand.sel'khoz.nauk

Development of the cultivation of flax and other oilseed plants in  
Siberia, Kazakhstan, and the Ural Mountain region. Zemledelie 23  
no.8:20-24 Ag '61. (MIRA 14:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut maslichnykh  
i efiromaslichnykh kul'tur.  
(Siberia--Oilseed plants) (Kazakhstan--Oilseed plants)  
(Ural Mountain region--Oilseed plants)



PEREMYKIN, V. I.

PEREMYKIN, V. I. "The organizational-agricultural plan for the Lakotne Vilkiya, "  
Izvestiya Akad. nauk Latv. SSR, 1946, no. 11, p. 17-39.

SO: U-3042, 11 March 51, (Sotopis Zhurnal Nykh Statey, No. 7 1946).

PEREMYSHLENNIKOV, I.I.

Experience in active surgical sanitation for the collective farms' workers in a rural district. Klinakhir. no.12861-62 D '62.  
(MIRA 1682)

1. Khirurgicheskoye otdeleniye (zav. - I.I. Peremyshlennikov)  
Mashevskoy rayonnoy bol'nitsy Poltavskoy oblasti (nauchnyy  
rukovoditel' - prof. V.A. Kartavin).  
(MASHEVKA DISTRICT--AGRICULTURAL WORKERS--DISEASES AND HYGIENE)

PEREMYSHLENNIKOV, I.I.

Experience in the transfusion of blood, its components and  
blood substitutes in a rural district hospital. Probl. gemat.  
i perel. krovi 9 no.4:46-47 Ap '64.

(MIRA 17:11)

1. Mashevskaya rayonnaya bol'nitsa (glavnyy vrach P.G. Mashevskiy,  
nauchnyy rukovoditel' - prof. V.A. Kartavin, Koltsevskoy oblasti).

PIREMYSHLIN, I.

We work and study. Fin. SSSR 23 no.12:74-77 D '62.  
(MIRA 16:1)

1. Zavedtyushchiy Vol'skim gorodskim finansovym otdelom  
Saratovskoy oblasti.

(Vol'sk—Finance)